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AIR TECHNICAL INTELLIGENCE PRODUCTION SCHEDULE

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PREFACE

This document lists the ATIC formal intelligence finished products and provides the schedule of these products. It is divided into four sections which cover the four different types of products, i.e., ATIC Technical Intelligence Studies, Technical Intelligence Reports, ATIC Handbooks, and Technical Intelligence Working Papers. Definitions of these products will be found in the introduction of each section. The scope and purpose of each product listed is summarized in the appropriate section.

SECTION I

AIR TECHNICAL INTELLIGENCE STUDIES

PART I Title and Completion Date

PART II Summaries

DEFINITION: ATIC TECHNICAL INTELLIGENCE STUDY

An ATIC Technical Intelligence Study is an intelligence estimate. It is an estimate covering the final and exhaustive evaluation of technical and scientific data resulting from the analysis of a complete air weapon or component and its method of manufacture; or it may present the overall status of scientific or technological developments related to air weapons of a foreign country in a given field. It reveals, in as complete detail as possible, the official resolution of a broad intelligence problem. This is done by integration of intelligence estimates based on intelligence factors with varying degrees of completeness and validity.

COMPLETION DATE

Completion date is the date on which the Director completes his coordination and forwards the product for final approval.

SECTION I PART I

ATIC TECHNICAL INTELLIGENCE STUDIES

Nr.	Title		PPT Nr	Completion Date
1.	(U)	AIE-11	611101	1 Mar Annual
2.	(U)	Estimated Characteristics of Sov Air Weapons	611201	1 Feb - 1 Aug (Semi-Annual)
3.	(U)	Tech Characteristics of Sov Air Defense Systems	611404	1 Jul Annual
4.	(U)	Tech Characteristics of Sov Offensive Air Systems	611405	1 Jan Annual
5.	(U)	Factors Underlying Sov Progress in Air Weapons Development	6181	Annual
6.	(U)	Estimated Development of Sov Bomber Aircraft	614401	15 Jan Annual
7.	(U)	Estimated Development of Sov Fighter Aircraft	614201	1 Nov Annual
8.	(U)	Estimated Development of Sov Support Aircraft	614601	15 Feb Annual
9.	(U)	Soviet Defensive GM	6163	15 Jul - 15 Jan (Semi-Annual
10.	(U)	Soviet Offensive GM Complete Supplement Nr. 1 - SMITIG Supplement Nr. 2 - RADAR	6161	15 Apr - 15 Oct (Semi-Annual)
11.	(U)	Soviet Space Vehicles	6162	15 Mar - 15 Nov (Semi-Annual)
12.	(U)	Soviet Radar (Ground)	5241	1 Jun Annual
13.	(U)	Soviet Radar (Airborne)	5245	1 Feb Annual
14.	(U)	Soviet Communications (Both Ground and Airborne)	5261	1 Nov Annual

SECTION 1 PART I

ATIC TECHNICAL INTELLIGENCE STUDIES

Nr.	Title		PPT Nr	Completion Date
15.	(U)	Soviet Navigation Capabilities (Long and Short Range)	5251	1 Feb Annual
16.	(U)	Soviet Infra-Red	5281	10 Dec Annual
17.	(U)	Soviet ECM (Both Capability and Vulnerability)	5282	10 Nov Annual
18.	(U)	Soviet Offensive Missile Guidance Sub-Systems	5220	15 Mar - 15 Sep (Semi -Annual)
19.	(U)	Soviet Defensive Missile Guidance Sub-Systems	5221	15 Apr - 15 Oct 59 (Semi-Annual)
20.	(U)	Soviet Fuels Propellants and Lubrioants	511006	1 Jan Annual
21.	(U)	Soviet Air Breathing Power Plants for Guided Missiles	511007	1 Sep Annual
22.	(U)	Air Breathing Power Plants for Aircraft	511008	1 May Annual
23.	(U)	Soviet Rocket Power Plants for Long Range Missiles and Space Vehicles	511009	1 May Annual
24.	(U)	Soviet Rocket Power Plants for Aircraft and Short Range Missiles	511010	1 Sep Annual
25.	(U)	Analysis of Bounder Aircraft	614309	15 Dec 58

SECTION I PART II

DESCRIPTION AND SCOPE

1. AIE-11.

This study is a treatment of the major Soviet progress factor in technological areas relative to air weapon development. It is an attempt to identify areas of technological superiority on the part of the Soviets.

2. ESTIMATED CHARACTERISTICS OF SOVIET AIR WEAPONS.

This document is a tabular presentation of performance characteristics of all major air weapons and air weapon components covering known items and future estimates.

3. TECHNICAL CHARACTERISTICS OF SOVIET OFFENSIVE SYSTEMS.

This study presents an estimate of the technical capabilities of the integrated Soviet Air Defense System. It covers in some detail, with reference to supporting reports, identification and description of the elements which make up the Soviet defense system and a treatment of how these elements function together. This coverage is presented for both the current time period and for the next 10 years.

This study presents an evaluation of the Soviet Air Defense System under varying conditions.

4. TECHNICAL CHARACTERISTICS OF SOVIET OFFENSIVE AIR SYSTEMS.

This study presents the technical capability of the Soviet Offensive Air Systems which include the long range strategic systems and the tactical offensive systems. It describes in some detail how the elements work.

DESCRIPTION AND SCOPE

4. (Cont'd)

together with reference to more detailed treatment contained in studies of the specific components. The study covers those offensive systems as they exist at present and are expe cted to exist for the next 10 years. In addition to describing the make up of the systems, this study presents an evaluation of the capabilities of the systems under a variety of conditions which they may be expected to operate.

5. FACTORS UNDERLYING SOVIET PROGRESS IN AIR WEAPON DEVELOPMENT.

This study will present an analysis of significant factors related to the status and trends in the organization, volume, and direction of aeronautical research and development in the Soviet Union.

This analysis will cover the factors of research and development philosophy, systems and methods of research and development management, technical education and environment (including social, political and economic aspects).

6. ESTIMATED DEVELOPMENT OF SOVIET BOMBER AIRCRAFT.

This study provides the detailed back up for the estimate of future Soviet Bomber weapon systems estimates. It presents major trends noted relative to this class of weapons and discusses the intelligence available which is directly associated with the estimated future bombers. Summaries of results of analysis in related fields of work are presented with appropriate

DESCRIPTION AND SCOPE

6. (Cont'd)

reference to the more complete treatment. This study covers Soviet conventional manned bomber aircraft, nuclear powered manned aircraft and advance performance manned vehicles. Treatment of the major components such as propulsion, weapons, bombing and navigation and armament is presented in some detail. The study provides for evaluation of the technical capabilities of each weapon system estimated.

7. ESTIMATED DEVELOPMENT OF SOVIET FIGHTER AIRCRAFT.

This study provides the detailed reasoning and back up for the estimated future fighter weapon systems. It covers in some detail the trends observed in fighter design, the information relative to the future fighter estimates and discussion of the results of analysis of these factors. The study summarizes the results of analysis in associated areas of work with appropriate references to the detailed treatment of these subjects.

The study covers estimated future Soviet fighter weapon systems, their in service date and their estimated performance. It treats in some detail the major components and sub systems such as armament, propulsion and fire control.

The study provides for evaluation of the technical capabilities of each weapon system estimated.

DESCRIPTION AND SCOPE

8. ESTIMATED DEVELOPMENT OF SOVIET SUPPORT AIRCRAFT.

This is a presentation of the background information, and thinking which back up estimates of future Soviet Support Aircraft. Consideration is given to the Soviet civil as well as the military requirements for support aircraft. For the purpose of this study, support aircraft include: Transport (Cargo and Passenger), Aircraft, Helicopters and Tankers, and Trainers which are not based on operational types.

The study treats in some detail the characteristics and performance of the Support Aircraft Estimates as well as an evaluation of each aircraft covered.

9. SOVIET DEFENSIVE GUIDED MISSILES.

This study presents in some detail the available information on Soviet Defensive Guided Missiles and discusses the results of analysis of this information. It covers the defensive guided missiles estimated for the next 10 years and provides for a discussion of the reasoning and background for these estimates. Appropriate reference is made to more detailed studies on related subjects and reports of detailed technical analysis of sub systems and components of defensive missiles. Defensive missiles cover surface to air guided missile weapon systems and air to air guided missiles sub systems.

10. OFFENSIVE GUIDED MISSILES.

This study presents the detailed characteristics of known or estimated current offensive guided missile systems and estimates the Soviet's

DESCRIPTION AND SCOPE

10. (Cont'd)

offensive missile systems which will become available for service use for the next 10 years. The study presents the results of analysis in subjects relative to these estimates with appropriate reference to the detailed documents. Graphic presentations of offensive missile development cycles are presented showing significant points along the cycle. Offensive guided missile performance characteristics and an evaluation of each missile covered is presented.

For the purpose of this study, offensive guided missiles are surface-to-surface missile systems and air-to-surface guided missile sub systems.

11. SOVIET SPACE VEHICLES.

The study discusses the results of analysis of Soviet achievements in space vehicles development with appropriate reference to detailed treatments in related fields. It presents technical details of known Soviet space vehicles and outlines the estimated future Soviet space vehicle program. Discussion of the information and results of analysis by which this estimate was derived is presented with appropriate reference to detailed treatments in related fields of study.

For the purpose of this study, space vehicles are manned or unmanned earth orbiting vehicles, and manned or unmanned scientific research inter-planetary vehicles. Manned weapon systems or vehicles leading to

DESCRIPTION AND SCOPE

11. (Cont'd)

manned weapon systems are covered in the study on Soviet Bomber Aircraft.

12. SOVIET RADAR (GROUND).

This study presents, in some detail, a description and performance characteristics of Soviet Ground Radar, currently known or estimated to be in existence. It provides for an estimate of expected Soviet Ground Radar for the next 10 years. The study presents a discussion of the reasoning and factors used in deriving this estimate. It treats in some detail, the results of analysis in associated subject areas of research with appropriate reference to the detailed analysis in these areas. The study presents logical development cycles for each future ground radar covered and identifies the highlights of events along the development cycle including available information which correlates with the cycle.

Ground Radar for the purpose of this study includes surface based radars which are used for early warning, GCI and IFF. Ground based radars which are an integral part of missile guidance systems are not covered by this study.

13. SOVIET RADAR (AIRBORNE)

This study presents the detailed characteristics and performance of Soviet Airborne Radar. It covers the significant items of air borne radar which are currently known or estimated to be in existence and presents and estimate

DESCRIPTION AND SCOPE

13. (Cont'd)

of Soviet airborne radar for the nest 10 years. Some discussion of the factors underlying Soviet airborne radar development and the reasoning behind the estimate is presented. The study discusses results of analysis in areas associated with airborne radar development and makes appropriate reference to detailed studies in these subject areas. Airborne radar, for the purpose of this study, will include airborne intercept radar, bombing and navigation radar, tail warning radar.

14. SOVIET COMMUNICATIONS (BOTH GROUND AND AIRBORNE).

This study identifies and describes in some detail Soviet communications equipment and communications sub systems which are employed either directly or indirectly in air operations. The study provides for description and technical characteristics of each item of equipment identified. The study covers the systems of operations and evaluates the capabilities of Soviet communications sub systems. In addition to the existing present day communications equipment and sub systems, this study, estimates the communications equipment and sub systems which will become available for use during the next 10 years and presents their technical characteristics.

The study discusses the reasoning behind these estimates and presents the results of analysis in associated areas with appropriate reference to the detailed analysis.

DESCRIPTION AND SCOPE

14. (Cont'd)

The Soviet Communications Ground and Airborne include ground-to-ground voice teleprinter and data link equipment and sub systems and air-to-ground and air-to-air voice equipment and sub systems.

15. SOVIET NAVIGATION CAPABILITIES.

This study presents the technical characteristics of navigational aids which are suitable for, or intended for, air operations. The study identifies the equipment associated with these aids and presents the significant characteristics of each item identified. This study presents an estimate of navigational aids which will become available during the next 10 years. Discussion of the information and the reasoning behind this estimate is presented along with an evaluation of the navigational capabilities of the combinations of equipment when employed in a sub system. The study discusses the results of analysis in associated fields of research and makes appropriate reference to these analyses.

16. SOVIET INFRA RED.

This study covers the infra red equipment and sub systems which are known to exist or estimated to be in existence, and intended for, or applicable to, air or space operations. This study discusses in some detail the capabilities and describes the technical characteristics of Soviet infra red equipment. In addition, it presents an estimate of this equipment for the next 10 years and discusses the reasoning behind this estimate.

DESCRIPTION AND SCOPE

17. SOVIET ECM (BOTH CAPABILITY AND VULNERABILITY)

This study describes the technical characteristics of known or estimated present day Soviet ECM equipment. It presents an estimate of ECM equipment for the next 10 years and discusses the reasoning behind these estimates. This study also includes the discussion of the devices on Soviet electronic equipment developed to lessen the effects of counter measures.

18. SOVIET OFFENSIVE MISSILE GUIDANCE SUB SYSTEMS.

This study describes in detail the technical characteristics of Soviet Offensive Missile Guidance Sub Systems. It discusses the methods used in associating various components and presents a treatment of the evaluation of these components when working together in a sub system. This study provides for an estimate for the next 10 years of the offensive guided missile guidance sub systems which will come into use during the next 10 years.

This study includes guidance systems for air-to-surface and surface-to-surface missiles.

19. SOVIET DEFENSIVE MISSILE GUIDANCE SUB SYSTEMS .

This study describes in detail the technical characteristics of Soviet Defensive Missile Guidance Sub Systems. It discusses the methods used in associating various components and presents a treatment of the evaluation of these components when working together in a sub system. This study

DESCRIPTION AND SCOPE

19. (Cont'd)

provides for an estimate for the next 10 years of the defensive guided missile guidance sub systems which will come into use during the next 10 years.

This study includes guidance systems for air-to-air and surface-to-air missiles.

20. SOVIET FUELS, PROPELLANTS AND LUBRICANTS.

This study discusses the fundamental considerations of those materials used in propulsion systems as fuels, fluids and lubricants. Such substances include not only those in current conventional use, but also those envisaged to meet the demands imposed by hypersonic flight and extreme altitude, or space operations.

This study presents a review of current Soviet research and development activities which indicate the materials in current use and those proposed for use in future air weapons. The Soviet technology is reviewed to illustrate the capability of meeting present and future demands for fuels, propellants and lubricants.

For the purpose of this study, fuels include those substances used in air breathing engines, and, as energy sources, those materials and phenomena proposed for producing propelling motion in ionospheric and

DESCRIPTION AND SCOPE

20. (Cont'd)

space regions. Propellants are those solid and liquid materials used in non-air breathing engines such as guided missiles and rockets. Lubricants are those substances or formulations intended for use as lubricants or as the related hydraulic fluids.

After publication of the initial study (1 January 1959), the scope will be expanded to include nuclear fuel elements and related chemical technology. Subsequent reports will therefore embrace nuclear fuels as well.

21. SOVIET AIR BREATHING POWER PLANTS FOR GUIDED MISSILES.

This study presents characteristics and performance of known and estimated Soviet air breathing engines for guided missiles. It contains a discussion of the estimates, results of analysis from which the estimates were derived, results of analysis in subjects related to the estimates and appropriate references to other ATIC products and related documents.

For purposes of this study, air breathing engine types considered are turbojet and ramjet, utilizing hydrocarbons, high energy fuels, and nuclear reactor energy sources.

22. SOVIET AIR BREATHING POWER PLANTS FOR AIRCRAFT.

This study presents characteristics and performance of known and estimated Soviet air breathing engines for aircraft. It contains, (1) a discussion of the estimates, (2) results of analysis from which the estimates were derived, (3) results of analysis in subjects related to the estimates and (4) appropriate

DESCRIPTION AND SCOPE

22. (Cont'd)

references to other ATIC products and related documents. The estimates will be presented in a combination of tabular, graphic and written test.

For purposes of this study, air breathing engine types considered are turbojet, turbofan, turboprop and ramjet, utilizing hydrocarbons, high energy fuels, and nuclear reactor energy sources.

23. SOVIET ROCKET POWER PLANTS FOR LONG RANGE MISSILES AND SPACE VEHICLES.

This study presents over-all component and power plant characteristics and performance of known and estimated Soviet rocket power plant packages for long range missiles and space vehicles. It contains a discussion of the estimates, results of analysis from which the estimates were derived, results of analysis in subjects related to the estimates, and appropriate references to other ATIC products and related documents.

For purposes of this study, rocket engine types considered are those employed in ballistic missiles, long range aerodynamic weapons, satellites, and space vehicles. The entire power plant packages shall be presented as exemplified by the following components: tankage, feed lines, controls, valving, mounts, injectors, pumps, cooling systems, combustion chambers, and nozzles. In addition, materials of construction, propellants, and other basic scientific areas shall be presented as they specifically effect and pertain to the rocket engines. The study will consider rockets employing chemical propellants, solid and liquid in nature, transconventional high energy fuels, and nuclear reactor energy sources.

DESCRIPTION AND SCOPE

24. SOVIET ROCKET POWER PLANTS FOR AIRCRAFT AND SHORT RANGE MISSILES

This study presents over-all component and power plant characteristics and performance of known and estimated Soviet rocket power plant packages for aircraft and short range missiles. It contains, a discussion of the estimates, results of analysis from which the estimates were derived, results of analysis in subjects related to the estimates, and appropriate references to other ATIC products and related documents.

For purposes of this study, rocket engine types considered are those employed in surface-to-air, air-to-surface, air-to-air, and surface-to-surface missiles of short range. Aircraft rocket propulsion systems which will be considered are illustrated by JATO, zero length launch boosters, super-performance, and primary power. The entire power plant packages shall be presented as exemplified by the following components: tankage, feed lines, controls, valving, mounts, pumps, injectors, cooling systems, combustion chambers, and nozzles. In addition, materials of construction, propellants, and other basic scientific areas shall be presented as they specifically effect and pertain to the rocket engines. The study will consider rockets employing chemical propellants, solid and liquid in nature, trans-conventional high energy fuels, and nuclear reactor energy sources.

SECTION III

ATIC TECHNICAL HANDBOOKS

PART I — Title

PART II — Summaries

DEFINITION: ATIC HANDBOOK

An ATIC Handbook is a compilation of tabulated and graphic data assembled in a loose-leaf form for easy revision. These documents are reviewed periodically and revised as required by the development of new information pertinent to their subject area.

SECTION III - PART I

ATIC TECHNICAL INTELLIGENCE HANDBOOKS

NUMBER		TITLE	TASK NUMBER
1	(U)	Estimated Future Soviet Aircraft Handbook	
2	(U)	Handbook of Characteristics & Performance of USSR Aircraft	614501
3	(U)	Handbook of Characteristics & Performance of FFN Aircraft	611303
4	(U)	FFN Guided Missiles Handbook	611305
5	(U)	Handbook of Characteristics & Performance of Soviet Navigation Equipment	525001
6	(U)	Handbook of Characteristics & Performance of Soviet Communication Equipment	526003
7	(U)	Handbook of Characteristics & Performance of Soviet Radar	524002
8	(U)	Handbook of Soviet Materials	
9	(U)	Handbook of Characteristics & Performance of Soviet Aircraft Armament	531001
10	(U)	Handbook on Characteristics of Soviet Power Plants	511001
11	(U)	Soviet Vacuum Tube Data	528301
12	(U)	Worldwide Electronic Equipment Electro-Magnetic Handbook	524103

SECTION III - PART II

ATIC TECHNICAL INTELLIGENCE HANDBOOKS

DESCRIPTION AND SCOPE

1. ESTIMATED FUTURE SOVIET AIRCRAFT

This document presents in a form which can be readily revised the tabulated and graphic performance and characteristics data on Estimated Future Soviet Aircraft including data on associated armament and equipment. A graphic display of the expected development cycle through initial operational use is presented for each aircraft covered. A brief write-up on the basis and validity of each estimate is also presented.

2. HANDBOOK OF CHARACTERISTICS & PERFORMANCE OF USSR AIRCRAFT

This document presents in graphic form characteristics and performance of known Soviet aircraft of significance. Performances presented in accordance with MIL. SPEC. 5011A. This document can be used for comparison with comparable USAF types of aircraft.

The handbook covers significant known aircraft developed by the Soviet Union.

3. HANDBOOK OF CHARACTERISTICS & PERFORMANCE OF FFN AIRCRAFT

This document covers the significant aircraft developed by Friendly Foreign Nations. Performance is presented primarily based upon information supplied by the country who developed the aircraft. In some instances, performance is computed and presented on the basis of MIL. SPEC. 5011A and in such cases is comparable to U.S. performance data.

4. FFN GUIDED MISSILES HANDBOOK

This handbook presents performance and characteristics of known Friendly Foreign Nations Guided Missiles.

5. HANDBOOK OF CHARACTERISTICS & PERFORMANCE OF SOVIET NAVIGATION EQUIPMENT

This handbook contains technical details and performance data presented in graphic and tabulated form on known Soviet Navigation Equipment. This includes equipment for short range and long range navigation both airborne and ground based.

6. HANDBOOK OF CHARACTERISTICS & PERFORMANCE OF SOVIET COMMUNICATION EQUIPMENT

This handbook presents in tabulated and graphic form the technical characteristics and performance of Soviet Communication Equipment which would be associated with air operation. The handbook covers both ground based and airborne equipment.

7. HANDBOOK OF CHARACTERISTICS & PERFORMANCE OF SOVIET RADAR

This handbook in graphic and tabulated form the performance and technical characteristics of known Soviet airborne and ground based radar.

8. HANDBOOK OF SOVIET MATERIALS

This handbook presents in tabular form the characteristics and chemical composition of significant Soviet Materials which are used or could be expected to be used in air material development.

9. HANDBOOK OF CHARACTERISTICS & PERFORMANCE OF SOVIET AIRCRAFT ARMAMENT

This handbook presents in graphic and tabular form the description characteristics and performance of Soviet aircraft guns, rockets, bombs and fuses.

10. HANDBOOK ON CHARACTERISTICS OF SOVIET POWER PLANTS

This handbook covers in tabular and graphic form the technical characteristics and performance of known Soviet Power Plants.

11. SOVIET VACUUM TUBE DATA

This document is a tabulation of the characteristics of all known Soviet Vacuum Tubes.

12. WORLDWIDE ELECTRONIC EQUIPMENT ELECTRO-MAGNETIC HANDBOOK

This document presents in tabular form the significant electronic characteristics of all known electronic equipment.

DATE 19 Dec 58

ROUTING SLIPS

COL. McFARLAND

MR. SOMERS

MR. MARSHALL

MR. LEONARD

PHOEBE ✓

MARTHA

BEVERLY ✓

Comments:

File:

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